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argentea, *Viola striata*, and *Cornus canadensis*. — Dr. T. S. Stevens exhibited a little garter-snake (*Eutaenia sirtalis*) preserved by nature in an interesting manner. It had been taken from beneath a wheat-stack in its present condition, the body thrown in graceful coils and curves, the head erect, the whole appearing like a snake on the alert, yet dead, perfectly dry and mummy-like, and presenting only the slightest changes externally. According to Dr. Stevens, it has remained in this condition, without any special attention, for ten years.

Academy of natural sciences, Philadelphia.

March 4. — Professor Joseph Leidy stated that he had recently been supplied with specimens of a wheel-less rotifer, attributed to *Apsilus*, which had been found abundantly last autumn, in a pond at Fairmount Park, attached to *Anacharis*, and in the Schuylkill River, near by, attached to *Potamogeton*. They were recognized as *Dictyophora*, first described in 1857; and as a result of the last examination, Professor Leidy was led to the opinion, that this form, the *Apsilus lentiformis* of Mecznicow, the *Capelopagus lucinadax* of Forbes, and the *Apsilus bipera* recently described by Miss Foulke, are all the same species. In the recent specimens, he had recognized the lateral antennae ending in exceedingly delicate and motionless cilia, as indicated by Mecznicow, and which previously, from the wrinkled condition of the specimens detached from hard objects, had escaped his attention. In all the forms described, the prehensile cup, in the same manner, is projected from, and withdrawn within, the mouth of a compressed oval or nearly spherical carapace, dotted with minute tubercles. This cup, substituting the usual rotary organs of rotifers, communicates with a capacious, variably sacculated, and dilatable stomach, followed by the ordinary gizzard with its mastax, and then a second sacculated stomach. The size of the European forms is fully thrice that of the one now described. — Miss S. G. Foulke described a species of ciliated infusorian of the genus *Trachelius*, found in the form of a white speck in water from the Schuylkill River. — Rev. Dr. H. C. McCook, referring to the spinning-work of spiders, stated that the orb-weavers have, as a rule, but one egg-nest; but this, in the different species, varies widely in form, size, position, etc. There are, however, four species which make several cocoons in connection with their webs. The labyrinth spider, *Epeira labyrinthica*, weaves a web of right lines crossing at all angles above the orb-web. In the midst of these right lines the spider lives, almost always under a dried leaf. Under the leaf is a little white silk tent or belt-shaped nest connected with the web by a trap-line. Hanging above the tent are nearly always five cocoons, braced above and below by a strong silken line. They consist of a lower cup portion, covered by a sort of lid, and each contains about twenty eggs. The tailed spider, *Cyrtophora caudata*, generally makes five nests, containing in the aggregate a hundred or a hundred and twenty-five eggs. These are strung along the median line of the orb-web. They are at first composed of a yellowish,

slightly viscid plush, and are afterwards covered with fragments of captured insects. This may be an instance of protective mimicry, as the cocoons so covered closely resemble the spider itself; or it may be due to the maternal impulse to protect the repositories of the young as far as possible. *Epeira basilica*, which forms a beautiful dome-like web placed over a silken sheet, suspends its cocoons vertically in the centre of the snare. They consist of a dusky gray silken sac, within which is a hard ball like a cherry-stone. This ball is quite black, but proves, when placed under a microscope and illuminated, to be woven of a fine-textured yellow silk. It is filled with finely chopped silk, in which the young spiders are hatched. *Uloborus riparia* makes a horizontal web, the cocoons being strung horizontally from the centre. They are double cones, covered with little protective points.

Mathematical section, philosophical society, Washington.

Jan. 30. — Mr. G. K. Gilbert made a communication on the Knight's tour, on other fields than those of sixty-four squares. He showed that a complete tour was impossible if the number of squares was odd; that a tour having *bilateral* symmetry (latter half of the moves symmetrical with former half, with respect to a line through the centre of the field) was impossible if the number of squares was divisible by four, and hence altogether impossible on square fields; that a tour having *quadri-radial* symmetry (divisible into four parts, which exactly repeat themselves when the board is turned through a right angle about the centre of figure) was impossible if the number of squares was divisible by eight; that the only symmetry possible on the ordinary chess-board was therefore *bi-radial* (of two parts that coincide when the board is turned through two right angles). Upon a field of thirty-six squares, twenty tours with bi-radial symmetry are possible: of these, five have also quadri-radial symmetry.

NOTES AND NEWS.

THE following communication, kindly placed in our hands by the committee on invitations and receptions of the Philadelphia meeting of the American association, will interest the members of the association:—

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,
22 ALBEMARLE STREET, LONDON, W.,

Feb. 27, 1884.

DEAR SIR, — The resolution of the American association, inviting members of our association to visit Philadelphia and take part in its meeting, was read to our general committee by Principal Dawson, and was received with enthusiasm. No definite resolution in reply was, however, proposed; because it was felt that the visit to Canada was only then assuming definiteness as to its outlines, and it was impossible to say what arrangements might be made in that country. But the members of the association were fully sensible of the courtesy and kindness of their American brethren; and the enclosed resolution, which was passed by the council at their last meeting,

and which I should have forwarded to the secretary of the American association as soon as the minutes had been confirmed, will, I hope, be regarded as a reply from our association.

The kind invitation repeated in your letter shall be embodied in a circular which we are about to issue to our members. I fear that at present it will be impossible for me to give you any idea of what number of our members will be able to avail themselves of the hospitality offered by your committee at Philadelphia, because at present only the bare outlines of the proposed proceedings at Montreal and in Canada are before them. When the immediate pressure of the issue of this circular is over, I will do my best to find out.

Very truly yours,

T. G. BONNEY, *secretary*.

Dr. P. FRAZER, *secretary*.

The resolution mentioned reads, —

"It was resolved to receive the standing committee and fellows of the American association on the footing of honorary members at the Montreal meeting, and the secretary was instructed to give intimation of this resolution, as far as possible, to the persons concerned."

Another letter just received from Professor Bonney encloses two circulars, — one containing a reprint of the resolution above referred to, and an invitation to the person to whom it is sent to attend the meeting in Montreal; stating, that, on its presentation to the secretary on or after Aug. 25, a ticket of honorary membership will be received in exchange: the other circular is an admirable condensation of such information as the British member is likely to need. Thus, the first two pages are devoted to the steamer-lines and the fares thereon; three pages are concerned with the railways; and it may be mentioned in this connection, that the Canadian government has promised to convey all British association members, associates, and their family parties, free of charge. The Canada Pacific and the Canada Atlantic offer them free excursions, the former granting free passes up to the date of their special free excursion to the Rocky Mountains (for a hundred and fifty only). The remaining pages give general information as to 'tickets,' 'local committees,' 'general instructions,' 'hotel rates,' 'telegraphs,' and 'cash.' The last page is a very convenient schedule, giving the various railways, the points between which they run, the distance in miles, and the rates in English and United States money. The passage which most interests the members of the American association is as follows: "A letter has been received from the representatives of the local committee at Philadelphia, cordially inviting the members of the British association to attend this meeting and take part in its scientific proceedings, and offering to do the utmost in their power to make their visit at once pleasant and profitable."

— From *Nature* we learn that the officers of the British association at the Montreal meeting will be as follows: president, Lord Rayleigh; vice-presidents,

the governor-general of Canada, Sir John Alexander Macdonald, Sir Lyon Playfair, Sir Alexander Tilloch Galt, Sir Charles Tupper, Sir Narcisse Dorion, Dr. Chauveau, Principal J. W. Dawson, Professor Edward Frankland, W. H. Hingston, Thomas Sterry Hunt; general treasurer, Prof. A. W. Williamson; general secretaries, Capt. Douglas Galton, A. G. Vernon Harcourt; secretary, Prof. T. G. Bonney; local secretaries, L. E. Dawson, R. A. Ramsay, S. Rivard, S. C. Stevenson, Thomas White; local treasurer, F. Wolferstan Thomas. The sections are the following: — **A**, Mathematical and physical science: president, Sir William Thomson; vice-presidents, Prof. J. B. Cherriman, J. W. L. Glaisher; secretaries, Charles H. Carpmal, Prof. A. Johnson, Prof. O. J. Lodge, D. MacAlister (recorder). **B**, Chemical science: president, Prof. H. E. Roscoe; vice-presidents, Professor Dewar, Prof. B. J. Harrington; secretaries, Prof. P. Phillips Bedson (recorder), H. B. Dixon, T. McFarlane, Prof. W. W. Pike. **C**, Geology: president, W. T. Blanford; vice-presidents, Professor Rupert Jones, A. R. C. Selwyn; secretaries, F. Adams, G. M. Dawson, W. Topley (recorder), W. Whitaker. **D**, Biology: president, Prof. H. N. Moseley; vice-presidents, Dr. W. B. Carpenter, Prof. R. G. Lawson; secretaries, Prof. W. Osler, Howard Saunders (recorder), A. Sedgwick, Prof. R. Ramsay Wright. **E**, Geography: vice-presidents, Col. Rhodes, P. L. Sclater; secretaries, R. Bell, Rev. Abbé Laffamme, E. G. Ravenstein, E. C. Rye (recorder). **F**, Economic science and statistics: president, Sir R. Temple; vice-presidents, J. B. Martin, Prof. J. Clark Murray; secretaries, Prof. H. S. Foxwell, J. S. McLennan, Constantine Molloy (recorder), Prof. J. Watson. **G**, Mechanical science: president, Sir F. J. Bramwell; vice-presidents, Prof. H. T. Bovey, P. G. B. Westmacott; secretaries, A. T. Atchison, J. Kennedy, L. Lesage, H. T. Wood (recorder). **H**, Anthropology: president, Prof. E. B. Tylor; vice-presidents, Prof. W. Boyd Dawkins, Professor Daniel Wilson; secretaries, G. W. Bloxam (recorder), Rev. J. Campbell, Walter Hurst, J. M. P. Lemoine.

It is expected that the public lectures will be by Mr. Crookes, Dr. Dallinger, and Professor Ball. We are glad to see that Section A is following the good example set by Professor Lankester in biology last year. A circular signed by Sir William Thomson has been issued by the committee of Section A, inviting the co-operation of mathematicians and physicists, and requesting those willing to read papers and take part in the discussions to send their names to the secretaries of Section A, British association, Albermarle Street, London. The following subjects have been selected for special discussion by the committee: on Friday, Aug. 29, The seat of the electromotive forces in the voltaic cell; on Monday, Sept. 1, The connection of sun-spots with terrestrial phenomena.

— At the meeting of the Royal astronomical society, Nov. 9, Prof. S. P. Langley of Allegheny, Penn., Dr. J. A. C. Oudemans of Utrecht, Netherlands, Prof. P. Tacchini of Rome, and Dr. E. Weiss

of Vienna, were elected foreign associates of the society.

— The committee of the Franklin institute, having in charge the organization of the electrical exhibition to be held in Philadelphia, has secured a site for the building on the large vacant lot bounded by Thirty-second and Thirty-third Streets, Lancaster Avenue, and Foster Street, which, by the liberal action of the Pennsylvania railroad company, has been leased to the institute for the purpose of the exhibition for a nominal consideration.

The meeting of the American association for the advancement of science, which will be held this year in Philadelphia, and the expected presence of many representatives of the British association, which will meet this year in Montreal, will attract a numerous and influential scientific gathering in Philadelphia during the time of holding of the exhibition; and, in

will join the towers. The building will have second-story apartments at its ends, with stairways leading up in the towers from the ground floor. The towers themselves will be three stories high. Two long and narrow hall-ways will afford communication between these apartments. The remainder of the ground will be enclosed by a large triangular building one story in height, and joined to the main hall.

The circular of information, with blank forms of application for space, may be obtained by addressing a request therefor to the secretary of the Franklin institute.

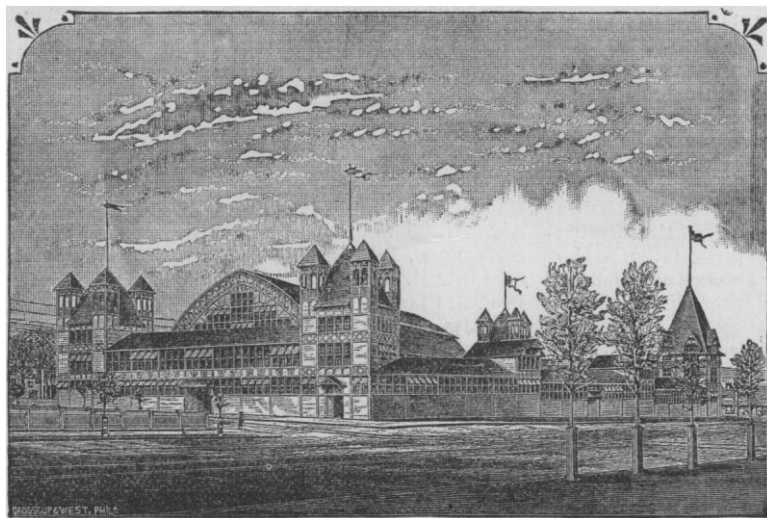
— It is proposed to establish a monthly *American meteorological journal*. It will begin with from twenty-four to thirty-two octavo pages, and will be enlarged as rapidly as is justified by the support given it. The first number will probably appear about the 1st of May. It will be published in Detroit by Dr.

W. H. Burr. The editing will be in the hands of Prof. M. W. Harrington of Ann Arbor, and he earnestly requests contributions from meteorologists. The publication price is placed at three dollars. All communications of a business character are to be addressed to W. H. Burr & Co., 100 Griswold Street, Detroit, Mich.; all others, to Prof. M. W. Harrington, Ann Arbor, Mich.

— The funeral of the late Dr. J. F. Julius Schmidt, director of the observatory at Athens, was of a public character, and the king and queen of Greece were present at the observatory during the delivery of the oration.

— The German geographical congress will be held in Munich from the 17th to the 19th of April. The principal subjects of discussion will be, the present situation of polar research, the latest proposals for the alteration of the meridian, the glacial period, and the making of school wall-maps. Several well-known travellers and investigators have already promised to speak.

— An international ornithological congress will be held for the first time in Vienna on April 7; and an exhibition of birds, and all that concerns their capture, transport, housing, and feeding, will be open April 4 to 14. The subjects for discussion at the congress will be, (1) a proposal for an international bird-protection act; (2) the origin of the domestic fowl, and the best means of improving the species; and (3) the foundation of stations for ornithological observations all over the inhabitable world. Communications should be addressed to Dr. Gustav von Hayek, 3 Marokkanergasse, Vienna.



order that so exceptional an opportunity to promote the interests of science shall not be lost, Congress has been requested to authorize the holding of a national conference of electricians, to convene in Philadelphia at that time. Should Congress make the proper provisions for holding such a conference, the results promise to be of much value.

The accompanying figure is a view of the exhibition building, which is now in process of erection, and which, by the terms of the contract, will be finished by the 15th of June.

The main building will be rectangular, having a length of two hundred and eighty-three feet, and a breadth of a hundred and sixty feet. A tower sixty feet high will be situated at each of the four corners of this building. One central arch of a hundred feet span, and two hundred feet in length, will cover the greater portion of the space occupied by this building; while two smaller ones, having a span of thirty feet, and running parallel to it on either side,